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TELECOPIER TRANSMISSION

DATE: March 16, 2004

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TO: FILING RECEIPT CORRECTIONS
FAX NUMBER: (703) 746-9195

FROM: Paul D. Bianco, Ph.D.
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REFERENCE: 785-A02-017-1

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MESSAGE:

PLEASE DELIVER THE FOLLOWING COMMUNICATION CONCERNING THE BELOW IDENTIFIED CASE TO FILING RECEIPT CORRECTIONS

Applicant(s): S. Jayaraman

Confirmation No. 4558

Application No.: 10/720,552

Group Art Unit: 1764

Filed: November 24, 2003

Examiner: Unknown

For: METHOD FOR MANUFACTURING A WIRE STENT COATED WITH A BIOCOMPATIBLE FLUOROPOLYMER

Docket No: 785-A02-017-1

1. Request for Correction of Filing Receipt (2 pgs)
2. Copy of Filing Receipt w/correction (2 pgs)
3. Copy of Utility Patent Application Transmittal Sheet (showing priority claim)
4. Copy of Fee Transmittal for FY 2004 (showing number of claims)
5. Page 1 of the Patent Application (showing priority claim)
6. Page 7, 8, and 9 of the Patent Application (showing number of claims)

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ATTENTION: FILING RECEIPT CORRECTIONS
On March 16, 2004

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): S. Jayaraman

Application No.: 10/720,552

Filed: November 24, 2003

For: METHOD FOR MANUFACTURING A WIRE STENT COATED WITH A BIOCOMPATIBLE FLUOROPOLYMER

Confirmation No. 4558

Group Art Unit: 1764

Examiner: Unknown

Docket No: 785-A02-017-1

REQUEST FOR CORRECTION OF FILING RECEIPT

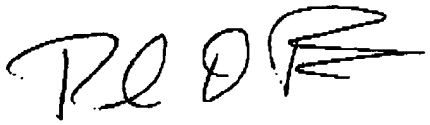
Commissioner for Patents
Alexandria, VA 22313

Sir:

The above-identified patent application's priority data, total claims and independent claims on the Filing Receipt mailed March 12, 2004 are not correct. Please correct the Filing Receipt as indicated on the enclosed marked-up copy. Specifically, the priority data should read -- This application is a continuation of U.S. Application No. 09/672,422, filed September 28, 2000 PAT 6,652,574--, not "a DIV of 10/448,876 05/30/2003 which is a CIP of 09/990,616 11/21/2001 PAT 6,685,843 ". The total claims should be --20-- not "11" and independent claims should be --4-- not "1". Enclosed are copies of Utility Patent Application Transmittal Sheet, Fee Transmittal for FY 2004 and pages 1, 7, 8, and 9 of the Patent Application showing the correct priority data and number of claims.

Accordingly, as this error is solely attributable to an Office mistake, no fee is believed to be due for this Request. However, please charge any required fee to Deposit Account 500601 (Atty. Docket 785-A02-017-1).

Respectfully submitted,



Paul D. Bianco, Reg. # 43,500

Enclosures

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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/720,552	11/24/2003	1764	428	785-A02-017-1	4	~~11~~ 20	~~4~~ 4

CONFIRMATION NO. 4558

33771
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FILING RECEIPT

OC000000012091845

Date Mailed: 03/12/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Swaminathan Jayaraman, Fremont, CA;

Domestic Priority data as claimed by applicant

This application is a ~~DIV of 10/448,876 05/30/2003~~
~~which is a CIP of 09/990,010 11/21/2001 PAT 6,685,843~~
CONTINUATION of U.S. Application No. 09/673,422, filed
SEPTEMBER 28, 2000, PAT 6,652,574.

Foreign Applications

If Required, Foreign Filing License Granted: 03/11/2004

Projected Publication Date: 06/17/2004

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **

Title

Method for manufacturing a wire stent coated with a biocompatible fluoropolymer

Preliminary Class

210

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Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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PTO/SB/05 (08-03)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	785-A02-017-1
First Inventor	S. Jayaraman
Title	METHOD FOR MANUFACTURING A WIRE STENT COATED WITH A BIOCOMPATIBLE FLUOROPOLYMER
Express Mail Label No.	EV 269993765 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☑ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☑ Applicant claims small entity status. See 37 CFR 1.27.
3. ☑ Specification [*Total Pages* 10]
(preferred arrangement set forth below)
- Descriptive title of the invention
- Cross Reference to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to sequence listing, a table, or a computer program listing appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings *(if filed)*
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

4. ☑ Drawing(s) (*35 U.S.C. 113*) [*Total Sheets* 4]
5. Oath or Declaration [*Total Sheets* 2]
a. ☐ Newly executed (original or copy)
b. ☑ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
a. ☐ Computer Readable Form (CRF)
b. Specification Sequence Listing on:
i. ☐ CD-ROM or CD-R (2 copies); or
ii. ☐ Paper
c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)
11. ☐ English Translation Document *(if applicable)*
12. ☑ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☑ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☑ Other Copy of Revocation and Power of Attorney, Notice of Recordation of Assignment and Certificate of Name Change

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☑ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 09/672,422

Prior application information: *Examiner* A. Vanatta *Art Unit:* 3765

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☑ Customer Number: 33771 *OR* ☐ Correspondence address below

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Name (Print/Type)	Christopher J. Menke for Paul D. Bianco	*Registration No. (Attorney/Agent)*	43,500
Signature		Reg. No. 53,316	*Date* November 24, 2003

Express Mail Label No.: EV 269993785 US

PTO/SB/17 (10-03)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 427.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	S. Jayaraman
Examiner Name	
Art Unit	
Attorney Docket No.	785-A02-017-1

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 500601

Deposit Account Name: Fleit Kain Gibbons Gutman Bongini & Bianco

The Director is authorized to: (check all that apply)

☑ Charge fee(s) indicated below ☑ Credit any overpayments

☑ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee

to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	385.00
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 385.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims	20	-20** =	0	x 9.00	= 0.00
Independent Claims	4	- 3** =	1	x 42.00	= 42.00
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 42.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($) 0.00

(Complete if applicable)

SUBMITTED BY					
Name (Print/Type)	Christopher J. Menke for Paul D. Bianco	Registration No. (Attorney/Agent)	43,500	Telephone	305 931-9620
Signature	Reg. No. 53,316			Date	November 24, 2003

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation of U.S. Application No. 09/672,422, filed September 28, 2000. Benefit of the earlier filing date is claimed in accordance with 35 U.S.C. §120.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to wire stents and related vascular devices. More particularly, it refers to a stent or other vascular positioned device containing a wire coated with a biocompatible fluoropolymer.

[0003] My prior application includes stents made from interwoven groups of yarn filaments containing a wire. U.S. Patent No. 6,161,399 issued December 19, 2000 and entitled, "Process for Manufacturing a Wire Reinforced Monolayer Fabric Stent" is hereby incorporated by reference. In addition, U.S. Patent No. 5,961,545 describes wire stents immobilized longitudinally between tubes of expandable polytetrafluoroethylene. U.S. Patent No. 5,957,954 describes braiding a stent and a polytetrafluoroethylene textile strand sleeve together in an axial alignment. U.S. Patent No. 6,015,432 describes an endovascular tube made from woven graft material with a wire employed in openings in the weave. U.S. Patent No. 5,741,325 describes a self-expanding intraluminal prosthesis containing interwoven fibers including reinforcing wire. U.S. Patent No. 5,607,478 describes how to make a prosthesis from an expanded polytetrafluoroethylene (ePTFE) tube with a winding of PTFE.

[0004] It also is well known in the prior art to coat insulated wire with foamed fluoropolymer insulation as described in U.S. Patent No. 5,770,819. None of these prior art disclosures teach how to coat a wire used in a prosthesis with a porous expanded PTFE to create uniform expansion of the prosthesis.

SUMMARY OF THE INVENTION

[0005] I have now invented a process to improve my stent of U.S. Patent No. 6,161,399 by coating the plurality of wire strands of the stent with a porous expanded PTFE. The addition of expanded PTFE to the wire strand reduces platelet adhesion to the stent product. Restenosis will not occur since tissue and cells will not adhere to the expanded PTFE.

[0006] The process of this invention is achieved by pretreating a spool of wire to achieve a predetermined shape to the wire and returning the treated wire to its spool. The wire is then fed

What is claimed is:

1. A method for making a stent comprising:

heat treating a plurality of wire strands;

coating the wire strands with a biocompatible fluoropolymer in an extruder to produce a plurality of coated wire strands;

spooling the coated wire strands; and

interlacing the coated wire strands from separate spools into a tightly held together monolayer integrated tubular shape, the tubular shape adapted to have axial and radial compressibility for insertion into a cardiovascular, vascular or non-vascular system of a human body.

2. The method as defined in claim 1 wherein the wire strands include a material selected from the group consisting of stainless steel, tungsten, titanium, nickel-titanium alloy, gold, silver or a combination thereof.

3. The method as defined in claim 1 wherein the fluoropolymer is selected from the group consisting of PTFE, ePTFE, FEP or a combination thereof.

4. The method as defined in claim 1 wherein at least one wire strand is employed in a coil pattern.

5. The method as defined in claim 1 wherein interlacing the coated wire strands is carried out in a knitting machine.

6. The method as defined in claim 5 wherein a brake mechanism on a spool supplying one coated wire strand causes the spool to supply such coated wire stand at a slower rate than other spools supplying the other coated wire strands.

7. The method as defined in claim 1 wherein textile strands are interlaced between the coated wire strands.

8. The method as defined in claim 7 wherein the textile strands include a material selected from the group consisting of polyester, polypropylene, polyethylene, polyurethane, polytetrafluoroethylene or a combination thereof.

9. The method as defined in claim 1 wherein at least one wire strand is preheated in an oven to impart an intended shape prior to coating.

10. The method as defined in claim 1 wherein the tightly held together monolayer integrated tubular shape allows for the exuding of blood for proper lumen wall function.

11. A method for making a stent comprising:

heating a plurality of wire strands to impart a desired shape to the wire strands;

coating each wire strand with a biocompatible polymer in an extruder to produce a plurality of coated wire strands; and

interlacing the coated wire strands to form a stent.

12. The method as defined in claim 11 further including regulating the speed of the wire strands in the extruder to provide a uniform coating.

13. The method as defined in claim 12 wherein interlacing includes braiding the coated wire strands in a braiding machine.

14. The method as defined in claim 13 further including spooling the coated wire strands onto spools, and wherein braiding includes removing the coated wire strands from the spools while braiding the coated wire strands in the braiding machine.

15. The method as defined in claim 14 further including regulating the speed of at least one of the spools at a slower rate than other spools.

16. The method as defined in claim 15 further including incorporating a fabric material between the braided, coated wire strands.

17. The method as defined in claim 16 further including preparing ends of the wire strands to prevent fraying.

18. The method as defined in claim 11 wherein interlacing includes knitting the coated wire strands in a knitting machine.

19. A method for making a stent comprising:

coating a plurality of wire strands with a biocompatible polymer and an adhesive in an extruder to produce a plurality of coated wire strands;

heating the coated wire strands to activate the adhesive; and

interlacing the coated wire strands to produce a stent.

20. A method for making a stent comprising:

interlacing a plurality of wire strands into a desired shape;

heating the wire strands in the desired shape;

removing the wire strands from the desired shape;

coating the wire strands with a biocompatible polymer; and

interlacing the wire strands to form a stent.